

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Hiroshige DEGUCHI, et al.

Application No.: 10/511,546

Filed: October 18, 2004

: Customer Number: 20277

: Confirmation Number: 6507

: Group Art Unit: 1745

: Examiner: Not yet assigned

For: METHOD OF DESIGNING REDOX FLOW BATTERY SYSTEM

**REQUEST FOR CORRECTED FILING RECEIPT**

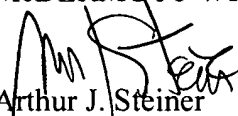
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Sir:

Attached is a copy of the Filing Receipt received from the U.S. Patent and Trademark Office in the above-referenced application. It is noted that the second Inventor's name is misspelled. Attached is a copy of the Declaration and Front Page of the Published International Application, which evidence that the second Inventor's name should read: Toshio SHIGEMATSU. It is requested that a corrected filing receipt be issued.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

  
Arthur J. Steiner  
Registration No. 26,106

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
Phone: 202.756.8000 AJS:blg  
Facsimile: 202.756.8087  
**Date: May 20, 2005**

**Please recognize our Customer No. 20277  
as our correspondence address.**



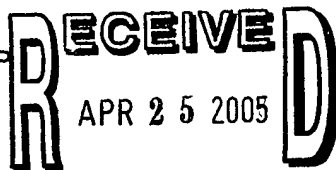
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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/511,546	10/18/2004	1745	950	52363-023	5	5	1

20277  
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600 13TH STREET, N.W.  
WASHINGTON, DC 20005-3096



MW&E

CONFIRMATION NO. 6507

FILING RECEIPT



\*OC000000015776518\*

Date Mailed: 04/19/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

Hiroshige Deguchi, Osaka, JAPAN;  
Toshio Shigamatsu, Osaka, JAPAN;  
Nobuyuki Tokuda, Osaka, JAPAN;

**Power of Attorney:** The patent practitioners associated with Customer Number 20277.

**Domestic Priority data as claimed by applicant**

This application is a 371 of PCT/JP03/05059 04/21/2003

**Foreign Applications**

JAPAN 2002-120157 04/23/2002

**Projected Publication Date:** 07/28/2005

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

Method for designing redox flow battery system

**Preliminary Class**

429

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**LICENSE FOR FOREIGN FILING UNDER  
Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

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Docket No.:

## **DECLARATION AND POWER OF ATTORNEY**

As a below named inventor, I hereby declare that:

My residence, post office and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter claimed and for which a patent is sought on the invention entitled **METHOD OF DESIGNING REDOX FLOW BATTERY SYSTEM**,

the specification of which

☐ is attached hereto.

☐ was filed on [case\_filing\_date] as Application Serial No. [case\_serial\_number] and was amended on (if applicable).

☒ was filed as PCT international application Number PCT/IP03/05059 on 21 April 2003.

and was amended under PCT Article 19 on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is known to me to be material to patentability in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

### **Prior Foreign Applications(s):**

Number	Country	Day/Month/Year filed	Priority Claimed
2002-120157	Japan	23 April 2002	<input checked="" type="checkbox"/> <input type="checkbox"/>

I hereby claim the benefit under 35 USC §119(e) of any United States provisional application(s) listed below.

### **Prior Provisional Application(s):**

Application Number	Filing Date
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I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

**Prior U.S. Application(s):**

Serial No.

Filing Date

Status: Patented, Pending, Abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorney(s) and/or agent(s): Stephen A. Becker, Reg. No. 26,527; John G. Bisbikis, Reg. No. 37,095; Richard E. Brown, Reg. No. 47,453; Daniel Bucca, Reg. No. 42,368; Kenneth L. Cage, Reg. No. 26,151; Alex H. Chan, Reg. No. 52,713; Bernard P. Codd, Reg. No. 46,429; Lawrence T. Cullen, Reg. No. 44,489; Paul Devinsky, Reg. No. 28,553; Margaret M. Duncan, Reg. No. 30,879; Ramyar M. Farid, Reg. No. 46,692; Michael E. Fogarty, Reg. No. 36,139; John R. Fuisz, Reg. No. 37,327; Keith E. George, Reg. No. 34,111; Thomas A. Haag, Reg. No. 47,621; John A. Hankins, Reg. No. 32,029; Catherine Krupka, Reg. No. 46,227; Jack Q. Lever, Reg. No. 28,149; Michael A. Messina, Reg. No. 33,424; Joseph H. Paquin, Jr., Reg. No. 31,647; Scott D. Paul, Reg. No. 42,984; William D. Pegg, Reg. No. 42,988; Gene Z. Robinson, Reg. No. 33,351; Brian K. Seidleck, Reg. No. 51,321; Joy Ann G. Serauskas, Reg. No. 27,952; David A. Spenard, Reg. No. 37,449; Arthur J. Steiner, Reg. No. 26,106; David M. Tennant, Reg. No. 48,362; Judith L. Toffenetti, Reg. No. 39,048; Kelli N. Watson, Reg. No. 47,170; Cameron K. Weiffenbach, Reg. No. 44,488; Aaron Weisstuch, Reg. No. 41,557; Edward J. Wise, Reg. No. 34,523; Jeffrey A. Woller, Reg. No. 48,041; Alexander V. Yampolsky, Reg. No. 36,324; William Young, Reg. No. 54,718; and Wei-Chen Chen and Tomoki Tanida, admitted under 37 CFR 10.9(b) all of

McDERMOTT WILL & EMERY LLP  
600 13th Street, N.W.  
Washington, D. C. 20005-3096

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with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and all future correspondence should be addressed to them.

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Full name of sole or first inventor: **Hiroshige DEGUCHI**

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Inventor's signature: *Hiroshige Deguchi*

Date: *July 26, 2004*

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Residence: **Osaka Japan**

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Citizenship: **Japan**

---

Post Office Address: **c/o Osaka Works of Sumitomo Electric Industries, Ltd., 1-3,  
Shimaya 1-chome, Konohana-ku, Osaka-shi Osaka 554-0024  
Japan**

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Full name of sole or first inventor: **Toshio SHIGEMATSU**

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Inventor's signature: *Toshio Shigematsu*

---

Date: *July 21, 2004*

---

Residence: **Osaka Japan**

---

Citizenship: **Japan**

---

Post Office Address: **c/o Osaka Works of Sumitomo Electric Industries, Ltd., 1-3,  
Shimaya 1-chome, Konohana-ku, Osaka-shi Osaka 554-0024  
Japan**

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Full name of sole or first inventor: **Nobuyuki TOKUDA**

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Inventor's signature: *Nobuyuki Tokuda*

---

Date: *August 9, 2004*

---

Residence: **Osaka Japan**

---

Citizenship: **Japan**

---

Post Office Address: **c/o The Kansai Electric Power Co., Inc., 3-22, Nakanoshima  
3-chome, Kita-ku, Osaka-shi, Osaka 530-8270 Japan**

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MAY 20 2005

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関  
国際事務局



(43) 国際公開日  
2003 年 11 月 6 日 (06.11.2003)

PCT

(10) 国際公開番号  
WO 03/092110 A1

(51) 国際特許分類: H01M 8/18, 8/04

阪市北区 中之島 3 丁目 3 番 2 2 号 関西電力株式会社内 Osaka (JP).

(21) 国際出願番号: PCT/JP03/05059

(22) 国際出願日: 2003 年 4 月 21 日 (21.04.2003)

(74) 代理人: 山野 宏 (YAMANO, Hiroshi); 〒532-0011 大阪府 大阪市淀川区 西中島 1 丁目 9 番 20 号 新中島ビル 7 階 啓明特許事務所 Osaka (JP).

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願2002-120157 2002 年 4 月 23 日 (23.04.2002) JP

(81) 指定国 (国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) 出願人 (米国を除く全ての指定国について): 住友電気工業株式会社 (SUMITOMO ELECTRIC INDUSTRIES, LTD.) [JP/JP]; 〒541-0041 大阪府 大阪市中央区 北浜四丁目 5 番 3 3 号 Osaka (JP). 関西電力株式会社 (THE KANSAI ELECTRIC POWER CO., INC.) [JP/JP]; 〒530-8270 大阪府 大阪市北区 中之島 3 丁目 3 番 2 2 号 Osaka (JP).

(84) 指定国 (広域): ARIPO 特許 (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 出口 洋成 (DEGUCHI, Hiroshige) [JP/JP]; 〒554-0024 大阪府 大阪市此花区 島屋一丁目 1 番 3 号 住友電気工業株式会社 大阪製作所内 Osaka (JP). 重松 敏夫 (SHIGEMATSU, Toshio) [JP/JP]; 〒554-0024 大阪府 大阪市此花区 島屋一丁目 1 番 3 号 住友電気工業株式会社 大阪製作所内 Osaka (JP). 徳田 信幸 (TOKUDA, Nobuyuki) [JP/JP]; 〒530-8270 大阪府 大

添付公開書類:  
— 国際調査報告書

2 文字コード及び他の略語については、定期発行される各 PCT ガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: METHOD FOR DESIGNING REDOX FLOW BATTERY SYSTEM

(54) 発明の名称: レドックスフロー電池システムの設計方法

(57) Abstract: A method for designing a redox flow battery system. Decrease in the system efficiency during charging/discharging due to a weak generated power or the load power is prevented without using a lead acid storage and thereby the system efficiency is enhanced. A power generator the power generation output of which varies irregularly is provided with a redox flow battery to smoothen the power generation output. The means value and the standard deviation of the battery output distribution to the smoothened power generation output are determined. At least one of the rated output of the battery and that of a converter that converts the battery output is determined on the basis of the standard deviation.

(57) 要約: 鉛蓄電池を用いることなく微弱な発電電力や負荷電力による充放電時のシステム効率を低下させず、かつシステム効率をより向上できるレドックスフロー電池システムの設計方法を提供する。本発明は、発電出力が不規則変動する発電装置にレドックスフロー電池を具えて発電出力を平滑化する。前記平滑化された発電出力に対する電池の出力分布の平均値と標準偏差を求める。そして、電池の規定出力及び電池の出力を変換する変換器の規定出力の少なくとも一方を前記標準偏差に基づいて決定する。

WO 03/092110 A1